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HELPING HAITI

On 25th January representatives from several countries, the European Union (EU), and international aid organisations met in Montréal, in Canada. The meeting was held to talk about how to rebuild Haiti after an earthquake devastated large areas of the country on 12th January. Stephen Harper, the prime minister of Canada, said reconstructing all the buildings and roads in the country could take ten years.

The earthquake that hit Haiti had a magnitude of 7.0. Its epicentre was about 25 kilometres (16 miles) from Port-au-Prince, the capital city. The violent earthquake began a few minutes before five o'clock in the afternoon. At that time many people were at work or in their homes.

Earthquakes occur because the surface of the Earth, called the crust, is made up of huge pieces called tectonic plates. The plates float on the mantle, a layer of hot

liquid rock beneath the crust. The edge of one plate can slide over or under another. The edges can also move apart from or crash into each other. Any of these movements can create very strong vibrations or tremors, known as earthquakes.

Haiti is on the dividing line between two tectonic plates – the North American plate and the Caribbean plate. Most earthquakes happen along these lines. Haiti's last big earthquake was over 200 years ago. Although scientists know where earthquakes are likely to happen, it is not yet possible to accurately predict when they will strike. Some scientists said the Haiti earthquake was overdue.

Haiti is one of the world's poorest countries. Port-au-Prince is a very overcrowded city. Many homes were badly built on steep hillsides that surround the city. Thousands of buildings collapsed in the earthquake. Many people inside them

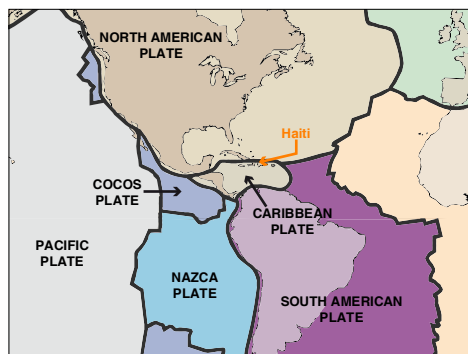
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were trapped and injured or killed as the walls and roofs fell down.

The earthquake blocked roads, caused the telephone systems to break down, shut off electricity, and broke water pipes. Many political officials and senior policemen were killed as the parliament building and several police stations fell down. The president, René Préal, and his wife survived, although the presidential palace was badly damaged. The president and his government are now holding meetings in a police station.



United Nations (UN) peacekeeping forces have been in Haiti since 2004. They are there to help stop violent gang wars. The UN headquarters building collapsed. It killed many UN workers, including its most senior official in Haiti.

Soon after other countries heard the news of the earthquake they offered to help. Barack Obama, the president of the USA, sent American navy ships and thousands of troops to Haiti. Around 70 rescue teams arrived from other countries. They carried special equipment designed to detect people trapped under buildings.

Organisations and individuals in many countries have donated money to help the people in Haiti. President Obama asked former presidents George W Bush and Bill Clinton to help to get people to donate money. Well-known singers and groups took

part in concerts in some countries to raise money for Haiti.

International aid organisations began sending food and tents for people who had no shelter. Yet the airport in Port-au-Prince has only one runway. The airport soon became so crowded that many planes carrying food, water and medical equipment had to be diverted. The city docks were badly damaged by the earthquake, so it was many days before ships carrying supplies were able to unload their cargoes. One senior official trying to organise food distribution to the Haitians who needed it called the problems 'a nightmare'.

Many people had no clean water to drink for over five days. Those organising the [relief](#) say it has been difficult to safely distribute things. The roads are blocked, telephone lines have not been working, there is little fuel for vehicles, and organisations such as the police can no longer work effectively. Eventually, American military helicopters and planes were used to drop food and water in areas outside the capital city.

Many children lost their parents in the earthquake and are now orphans. Even before the earthquake it was estimated that there were around 380,000 orphans in the country. Aid organisations are now trying to re-unite some of the children with relatives.

By 23rd January some of the search-and-rescue teams began to return to their home countries. Yet on 27th January, 15 days after the earthquake, a teenage girl was found alive under a collapsed building by a French rescue team. An official from the UN said over 130 people had been rescued so far.

Officials now believe the earthquake killed over 200,000 people.

Big holes are being dug by mechanical diggers. These are being used as mass graves.

The earthquake is estimated to have made around 1.5 million people homeless. Some people from Port-au-Prince have moved to the countryside to stay with relatives. Most of the others are living in tents or makeshift shelters. Some American officials are worried large numbers of homeless Haitians will try to cross the sea in small boats to illegally enter the USA.

Many different international aid organisations are now working in Haiti. Some people were unhappy about the number of journalists and photographers that arrived in the country to report on the disaster. They claimed journalists were getting in the way and disrupting the distribution of aid. Yet some reporters argued that it is their stories and pictures that are the reason so many people around the world are now donating money to help those affected by the earthquake.



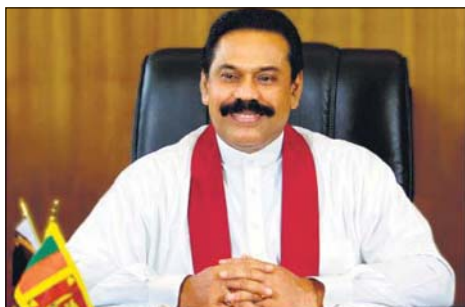
Those attending the meeting in Montréal agreed that a proper survey, called a damage assessment, will now be done in Haiti. This assessment will work out exactly what is needed to rebuild the country. The survey's results will be discussed at another meeting in March. This will be held at the UN headquarters, in New York City, in the USA. ■

SRI LANKA ELECTION

A presidential election was held in Sri Lanka on 26th January. This was the first election to be held since the country's 26-year-long civil war ended in May last year.

Although there were 22 official candidates only two really had a chance of winning.

One was Mahinda Rajapaksa, Sri Lanka's current president. He won the last presidential election in 2005. In Sri Lanka elections for the position of president normally take place every six years. But last year President Rajapaksa announced he wanted to hold the election two years earlier than this. This is allowed under the country's election rules. President Rajapaksa said he wanted to prove that most Sinhalese – people who live in Sri Lanka – still approve of him as their president.



Mahinda Rajapaksa, president of Sri Lanka

The other main candidate was General Sarath Fonseka. Until recently General Fonseka was the leader of the Sri Lankan army. He spent many years of his army career fighting in the civil war.

The war was between the Tamils, who mostly live in the north of the country, and government forces. The Tamils, who originally came from India, are Hindus. Most Sinhalese people are Buddhists and speak a different language from the Tamils.

The Tamils claimed they were **discriminated** against. They wanted

NewsCAST

WORLD'S FASTEST TEXTERS — Two teenagers from South Korea have shared a prize of Won 131 million (£62,000) for being the world's fastest text messagers. A mobile telephone company sponsored the competition. Competitors had to copy words that appeared on a computer screen in their own languages. Those who copied the words correctly in the shortest time were the winners. Some of the words even had spelling mistakes that the competitors had to copy accurately to be in with a chance of winning. Both winners say they will use their prize money to help pay for their studies.

their part of Sri Lanka to become an independent country. At one time Tamil forces controlled large areas of Sri Lanka. Yet last year government forces captured the Tamil military bases. The Tamil leader was killed and the war finally came to an end.

President Rajapaksa and General Fonseka worked closely together during the long civil war. But last year they had several disagreements. Most people believe each man thinks it was his leadership that ended the war.

Many people worried there would be violence on the day of the election. Extra security forces were sent to the places where people were voting. Yet observers said most people queued peacefully to cast their votes.

When General Fonseka went to cast his own vote he discovered he was unable to do so. His name had not been officially registered on the voting list. President Rajapaksa's supporters claimed this meant he should not be allowed to stand in

the election. Yet election officials confirmed that not being registered to vote did not **disqualify** someone from being elected president of the country.

The final result was not as close as many people expected. President Rajapaksa won 57% of the votes. General Fonseka got 40%. After President Rajapaksa was declared the winner General Fonseka said he was unhappy with the result. He said he planned to apply to the law courts and make a legal challenge to have the voting numbers checked. ■

ALIEN CONFERENCE

An anniversary meeting took place in London, the capital of the UK, on 25th and 26th January. It was held to mark the founding of an organisation called SETI, in the USA, 50 years ago. SETI stands for Search for Extra-Terrestrial Intelligence.

SETI's job is to search for intelligent life on other planets – or 'aliens'. However, after 50 years of looking, and listening for radio messages, it is yet to find any evidence of alien life.

Many well-known astronomers and **astrophysicists** from around the world attended the meeting. Dr Frank Drake is an American scientist who helped to set up SETI 50 years ago. He was one of the scientists who gave a lecture.

Over the last 50 years many new things have been discovered about the universe. Scientists now know it measures around 94 billion light years from one side to the other. A light year is the distance a single beam of light can travel in one year.

It is now known that the universe contains several billion galaxies.

Each is made up of billions of stars. To try to give us an idea of how many stars this is, astronomers often say there are roughly as many stars in the universe as there are grains of sand on all the beaches on the Earth. Our own Sun is one of these stars.

As there are so many stars, many scientists believe there must be other forms of life in the universe. Some think these life forms are probably only small microbe-like organisms. Others believe there must be numerous civilisations, many of which are much more intelligent than our own. They argue the only reason we do not know they are there is because we haven't yet found them. A few scientists think human beings are the only intelligent life form in the whole universe.



Milky Way

New technology has made it possible to design very powerful telescopes. Astronomers have been using them to search for rocky planets that orbit a larger star in the same way that the Earth orbits our Sun. The astronomers believe there is a chance these rocky planets could have life on them if they orbit their stars at the same distance as the Earth is from the Sun. If their orbit is too close, they will be too hot for any forms of life. If the orbit is too far away, the planets will be too cold.

So far about 400 of these planets have been discovered. But they are too far away for scientists to be

able to find out if there is any life on them.

Dr Drake, who is now 79 years old, is convinced that our human civilisation is not alone in the universe. He believes there are as many as 10,000 alien civilisations in our own galaxy, the Milky Way. Dr Drake says it is only a matter of time before we find, or are contacted by, one of them. ■

'CENTRE RIGHT' PRESIDENT WINS IN CHILE

Sebastián Piñera has been elected president of Chile. In a presidential election held on 17th January he beat Eduardo Frei. Mr Piñera won 51.6% of the votes. Mr Frei, who was president of Chile from 1994 to 2000, got 48.4%.

Mr Piñera is an economist and a very wealthy businessman. He owns a large television broadcasting company, and is the part-owner of an airline company and of one of the country's most successful football teams. Before the election he said he would sell most of his business interests if he were elected president.

In recent years Mr Piñera has spent large amounts of his money on repairing old football stadiums so people can use them. He has also paid for buses that take children from poorer families on free trips to museums, and contributed money to organisations that work to conserve Chile's tropical rainforest.

Mr Piñera will take over from Michelle Bachelet, who has been president for the last five years. Ms Bachelet is Chile's first woman president. She beat Mr Piñera in the last presidential election, held in 2005.

In Chile presidential elections take place every five years. During Ms Bachelet's term as president Chile's economy has done well and the living standards of most people have improved. Chile makes a lot of money from copper mining. The country is estimated to produce around one third of the world's copper. Recently, the price of copper has been high. This means the amount of money Chile makes from copper has increased.



Sebastián Piñera, president-elect of Chile

In Chile presidents cannot be elected for two successive periods, but for only one five-year term at a time. Ms Bachelet is very popular and most people think she would have been re-elected if the rules were different. Ms Bachelet is expected to stand for president again in the next presidential election.

Politicians and political parties are often described as being from the left, right or centre. Left, or left-wing, politicians believe the government is responsible for public welfare and for giving everyone shared access to a country's wealth and services. Right, or right-wing, politicians think it's not the government's place to enforce this sort of equality and that people are responsible for creating their own wealth. Politicians in the 'centre' are the midpoint between left and right. They believe in a mix of both 'left' and 'right' **policies**.

Mr Piñera is described as being on the 'centre right' whereas Ms

Bachelet and Mr Frei are considered to be from the 'centre left'. Mr Piñera will be Chile's first president to come from 'the right' for 20 years.

Currently, in South America most countries' elected presidents are from the 'left', such as President Chávez of Venezuela, President Lula of Brazil, President Kirchner of Argentina and President Morales of Bolivia. President Uribe of Colombia is the only other right-wing leader of a large South American country.

Mr Piñera promised if he were elected he would make it easier for young people to set up their own companies and businesses. He predicted that during his term as president an extra one million jobs would be created. Yet he also insisted he would continue to spend large amounts of government money on helping poor people in the country.

Mr Piñera – now known as the president-elect – will officially take over from President Bachelet on 11th March. ■

CHOCOLATE TAKEOVER

On 19th January two companies announced they planned to combine to become the world's largest producer of confectionery – sweets and chocolate. Kraft is a company that produces drinks, food and confectionery, based in the USA. Cadbury is a UK chocolate company.

Cadbury is famous for its chocolate in many parts of the world. John Cadbury founded the company in the UK in 1831. Today, it has factories in several countries and employs about 46,000

people. In 2008 the company was reported to have had sales of £5.4 billion (US\$8.75 billion).

Kraft began as a company selling cheese in the USA. James L Kraft founded it in 1903. Since then Kraft has taken over many other food and drink companies. Now it has 98,000 employees and it reports sales of US\$42 billion a year (£26 billion).

Kraft already owns some well-known chocolate companies, such as Toblerone of Switzerland, Milka of Austria, Marabou of Sweden and Côte d'Or of Belgium.

For nearly 140 years Cadbury was owned by the Cadbury family. Yet, by 1969 it had become a public

company. This meant the company was no longer 100% owned by the Cadbury family. Instead, the family offered the chance for people to buy a share of the company. Everyone who buys shares in a company is then a part-owner of it. These shares can be bought and sold, or traded. People or companies that own shares of a public company such as Cadbury are called shareholders or stockholders.

Irene Rosenfeld is the boss of Kraft. At the end of 2009 she told the chairman of Cadbury, Roger Carr, that Kraft wanted to buy Cadbury. Ms Rosenfeld said Kraft would offer to pay Cadbury's shareholders £7.70 (US\$12.45) for each share they owned. If most of

them agreed to sell their shares Kraft would then take over Cadbury.

Mr Carr insisted the price Kraft offered to pay for Cadbury shares was too low. After many negotiations and meetings,

Kraft increased its offer to £8.40 (US\$13.60) per share. This meant to buy all of Cadbury's shares Kraft would have to pay around £11.9 billion (US\$19.25 billion).

Mr Carr agreed with Kraft's increased offer and said he would recommend Cadbury shareholders sell their shares to Kraft. Large investment companies own most of the Cadbury shares. Six out of the ten largest Cadbury shareholders are American investment companies. These companies are all expected to accept Mr Carr's recommendation. If they do Kraft will be able to take over Cadbury.

Other chocolate companies were expected to show an interest in buying

Cadbury. Ferrero is a large chocolate company based in Italy. Some people suspected Ferrero would be willing to pay an even higher price for Cadbury shares than Kraft offered. Yet by 22nd January Ferrero confirmed it did not want to buy Cadbury. Hershey, another large American chocolate company, also said it was not interested in taking over Cadbury.

Many Cadbury workers said they were unhappy about their company being combined with Kraft. This is because they are worried Kraft might close some Cadbury factories and they would lose their jobs. Yet Kraft says it plans to increase the number of factory jobs in the UK and not reduce them. The union to which many Cadbury workers belong has written to shareholders asking them not to sell their shares to Kraft. The Cadbury shareholders have until 2nd February to decide if they will accept Kraft's offer. ■



SUPER-STRONG SNAIL SHELLS

by Dr Carol Ballard

A team of scientists in the USA has discovered how the design of body armour could be improved and how tanks might be made more 'bomb-proof'. Surprisingly, the scientists were not looking at new shapes or thicknesses of armour materials – instead, they were studying the shell of a deep-sea snail!

Snails are gastropods, a type of mollusc. They are invertebrates, which means they do not have a backbone inside them. Instead, their shells protect their soft, fleshy bodies. These shells are called exoskeletons. Although an exoskeleton is outside the body, it provides support in a similar way to the backbones and skeletons of vertebrates.

The type of snail the scientists have been studying is called the scaly-foot mollusc (*Crysomallon squamiferum*). It is about the size of an ordinary garden snail. It was first discovered in 2003, living on the seabed of the Indian Ocean.

The snail lives in a deep part of the ocean. Nearby are [hydrothermal](#) vents. These make the surrounding water hot and acidic. So to live in this part of the ocean, the snail has to withstand high pressure, hot temperatures and acidic water. The snail also has another problem – it has to protect itself from attacks by crabs and other predators.

The secret of the snail's survival is its three-layered shell. The scientists found that each layer of the snail's shell helps to increase its total strength. None of the layers on its own would give enough protection for the snail.

The snail's shell has a quality scientists call 'mechanical property amplification'. This means its triple-layered shell is many times stronger than the strength of the individual layers added up.

The scaly outer layer of the shell contains chemicals called iron sulphides. No other animal species in the world is known to make use of these chemicals. They give the shell extra strength. The shell's middle layer is soft and flexible. The inner layer is hard and [brittle](#). It contains a mineral

called aragonite, which is also common in the shells of other molluscs.

The scientists believe the two outer layers protect the snail from high temperatures and acidic waters. The curved shape of the outer layer also reduces pressure on the inner layer. The whole shell, the scientists say, is supported by the hard inner layer. This is why the shell does not collapse inwards.

The shell's design also helps the snail protect itself from predators. When a crab attacks a snail, it picks it up in its claws. The crab then squeezes hard, often for a day or two, until the shell cracks.

To copy a crab attack the scientists hit the snail shell with a sharp, diamond-tipped tool. They found that tiny cracks appeared around the iron sulphide scales. These scales, together with

the flexible middle layer, stopped larger cracks from forming. The scientists think the scales might also blunt the crab's claws, making it harder for the crab to crush the snail. The soft middle layer absorbs the squeezing effect and stops the inner layer from being crushed.

The scientists used computer models to find out how the shell's

geometry added to its strength. They say studying organisms such as the scaly-foot mollusc often helps to produce new ideas for designing man-made materials and structures. This is because these creatures have evolved to withstand difficult conditions over millions of years. Using designs found in nature in this way is called biomimetics.

The scientists say the next step is to create a man-made material that has the same [properties](#) as the snail's shell. This could be used to make stronger human body armour, helmets and protective coverings for military vehicles.

Scientists are also now studying the exoskeletons of beetles, armoured fish and other creatures. This biomimetics work could also assist with the strengthening of armour and even help produce new types of scratch-free paint.



Scaly-foot mollusc

HIPPO RETURNS

After spending ten days roaming around countryside in Montenegro, a hippopotamus has returned to her pen in a private zoo.



Nikica

The hippopotamus, called Nikica, escaped from the zoo after heavy rains flooded it on 12th January. The zoo is on an island in a lake. The island was eventually completely submerged by the floods. Eleven-year-old Nikica, who weighs two tonnes, was able to swim over the fence surrounding her pen.

Nikica swam to the nearby village of Plavnica. One farmer said he was surprised to find the hippopotamus when he left his house to go and feed his farm animals. People living in the village began to leave out hay for the hippo to eat.

The owner of the zoo said Nikica was not dangerous, but people in the village were warned not to go near her. This is because hippos can be very aggressive. Some people were worried if the hippo were to behave aggressively to anyone, she might have to be shot. The lake in which the island zoo is located forms part of the border between Montenegro and Albania. If the hippo had crossed the lake into Albania it would have been difficult to protect her.

Villagers were also told to stay away because the hippo might decide to start marking her territory.

When hippos excrete dung, they spin their tails around like a propeller on a plane. This spreads their dung over a wide area.

The zoo owner also owns a restaurant in the village. He began regularly feeding the hippo bread from his restaurant. On some days the hippopotamus would eat as much as 50 kilograms (110 pounds) of bread.

The zoo owner said he was sure if she were left alone Nikica would return to her pen when the floodwaters went down. This, he said, was because she would be able to return to the mud in her pen, in which she seems to enjoy wallowing. During the time she was free Nikica swam in the lake and walked around the countryside.

On 21st January, just as her owner predicted, Nikica decided to return to her own pen in the zoo on the island. ■

BREEDING PREHISTORIC CATTLE

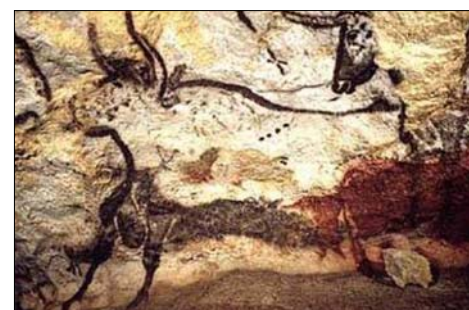
Italian scientists have announced they are trying to recreate an animal that finally became extinct around 400 years ago.

Aurochs were very large and aggressive wild cattle that inhabited Europe and parts of Asia. Experts think some were domesticated around 8,000 years ago. Many modern-day cows are thought to be descended from these domesticated cattle.

The bones of aurochs have been found in many different countries. The animals could grow to a height of two metres (6.5 feet). They had long horns and weighed more than one tonne. Pictures of aurochs can be seen in ancient cave paintings in Spain and France. Some

of these paintings are over 16,000 years old.

Julius Caesar, the Roman general, wrote about seeing aurochs in Gaul (modern-day France) over 2,000 years ago. He said they were only a little smaller than elephants. As aurochs were very aggressive, young men would try to prove their bravery by hunting and killing the animals.



Cave painting of auroch

In Britain aurochs are thought to have disappeared before the Romans arrived. The last one is believed to have died in Poland in 1627. Its skeleton is now in a Polish museum.

In the 1940s two German zoologists attempted to breed some aurochs. They had the support of senior members of the Nazi party, which governed Germany at that time. They planned to create large areas in Eastern Europe where aurochs could live and be hunted.

The German zoologists used a method called back breeding. They found modern breeds of large cattle that had similarities to aurochs. These were then crossbred. Their calves then had more auroch features than the parent cows. When the calves grew to be adults, they too could be crossbred. The idea was to produce more and more auroch-type features through the generations of the crossbred cattle.

At that time scientists didn't know about DNA or the genome – the

building blocks or ‘map’ that give living things their characteristics and features. Descendants of many of the cattle the German zoologists managed to breed still exist. They look like aurochs, but are much smaller. Their genes are very different from those of aurochs. These cattle are known as Heck cattle or Heck aurochs. Heck was the surname of the two German zoologists.

Now, the Italian scientists say they have used DNA from auroch bones to create the animal’s genome. So the scientists now know the auroch’s genetic map. They will use this, as well as back breeding, to try to recreate the extinct creature.

Not everyone agrees with what the scientists are doing. Yet they insist the new aurochs will produce much more milk and meat than modern-day cattle do. ■

GOOGLE, THE USA AND CHINA

On 22nd January Chinese officials made a complaint to the USA. They were angry that Hillary Clinton, a senior member of the government of the USA, criticised countries such as China and Iran for censorship of the internet. Censorship is a word that describes restricting or blocking what people are allowed to see or read.



The reason for the disagreement began on 13th January when Google, the American-based internet search engine company, threatened to close down its business in China.

It said it wanted Chinese authorities to stop censoring or blocking some of the websites that appear on its search engine pages in China.

Google, which was set up in 1998, is now one of the world’s most successful companies. It makes most of its money from businesses and companies paying for small advertisements on its search engine pages. Whenever someone clicks on one of these adverts, the company that placed it pays money to Google. These adverts are known as ‘pay-per-click’. Today Google’s revenue – the amount of money it receives for its services – is about US\$22 billion (£13.6 billion) per year. The company’s motto is ‘Don’t be evil’.

In 2006 Google decided to set up Google.cn – a search website in China. To do this it had to get permission from the Chinese government. The Chinese authorities said some websites that a Google search lists would have to be blocked. These included many that criticise China or the Chinese government. Some people have nicknamed this type of internet censorship in China ‘The Great Firewall of China’.

Eventually, Google agreed that its search engine pages in China could be censored. A Google search in China would still show all the websites found, even though some would be listed as blocked. This means Google users in China know the name of the websites that are censored. Many people criticised Google for agreeing to this. They said it was wrong to have accepted any form of censorship.

Google also runs a web-based email service called Gmail. It says it recently discovered some people and companies in China that have Gmail accounts have had their email messages ‘hacked’. Google suspects

NewsCAST

BILINGUAL DOG — Workers at an animal shelter in the UK have solved a mystery. A dog they are looking after did not seem to understand any of their commands. At first the staff thought the dog must be deaf. But when they found out where it came from, they worked out what the problem was. A Polish family had owned the dog so it did not understand any English words. The workers learnt some words of Polish and the dog was able to understand them. Now staff members are trying to train the Polish dog to understand English commands as well as Polish ones.

this is being done on the orders of Chinese officials.

After discovering the problem with the Gmail accounts Google announced it will close its business in China unless any form of censorship on its search pages is stopped. China denies its officials had anything to do with the hacking. It also says it will not agree to Google’s demands to stop blocking websites on its search pages.

In China around 25% of internet searches are done on Google.cn. Most people use Baidu, a Chinese company, for searching the web. Of all the money Google makes only a small amount comes from China.

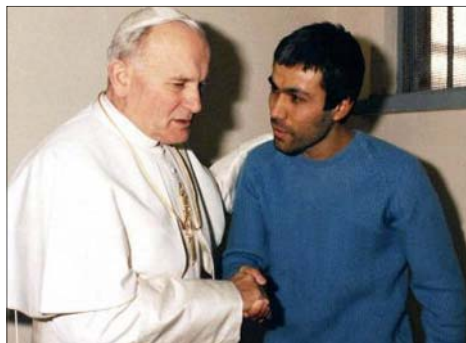
The American government has now decided to take Google’s side. It has used the disagreement to criticise China about internet censorship. Chinese authorities are angry about this. They claim China does not restrict internet freedom.

China insists the American government has nothing to complain

about. Security organisations in the USA, say the Chinese, frequently spy on people's email accounts. Chinese officials claim certain things on the internet are incorrect – including some of what people or organisations in other parts of the world write about China – so this information should be blocked. ■

POPE'S ATTACKER RELEASED

On January 18th Mehmet Ali Ağca was released from a jail in Turkey. He was imprisoned nearly 30 years ago for trying to [assassinate](#) Pope John Paul the Second, the former head of the Roman Catholic Church.



Pope John Paul meets Mehmet Ali Ağca in an Italian prison

In 1981 Pope John Paul was travelling in an open-topped car through St Peter's Square in The Vatican, in Rome, in Italy. The Vatican is the headquarters of the Roman Catholic Church. Mr Ağca was in a large crowd of people who had gathered in the square to see the Pope. As the Pope was driven past the crowd, Mr Ağca fired a gun at him several times. Although he was badly wounded, Pope John Paul survived the attack.

Italian police quickly arrested Mr Ağca. He was sentenced to spend the rest of his life in prison. Two years later Pope John Paul visited Mr Ağca in prison. Afterwards

the Pope announced that he had forgiven him.

In 2000 the Italian government decided to pardon Mr Ağca. He was released and sent back to Turkey. Turkish officials then arrested him for a murder and robberies committed before he tried to kill the Pope. In 2006 Turkish officials released him because of a change in the country's laws. But a court overruled this decision and he was arrested again eight days later.

When Mr Ağca was in prison in Italy, he said he had been given orders to kill the Pope. Yet he kept changing his story. At one time he said he had been working for a Palestinian group. Then he said he was obeying orders from Russia and Bulgaria.

Pope John Paul was born in Poland. When the Pope was shot by Mr Ağca in 1981, Poland was still controlled by the Russian-led Soviet Union. The Pope supported groups in Poland that wanted to break free from the Soviet Union. However, an investigation by the Italian police never found any reason to believe Russia or Bulgaria gave Mr Ağca orders to kill the Pope.

In 2007, while still in prison, Mr Ağca said he had changed his religion from Islam to Christianity. Since then Mr Ağca has claimed he is 'the [Messiah](#)' and 'the Christ [eternal](#)'. Doctors who have assessed him believe he is suffering from a mental illness.

Pope John Paul died in 2005, aged 85. During the Pope's last illness Mr Ağca wrote to him from prison, saying he hoped Pope John Paul would quickly recover.

After Pope John Paul's death, he was succeeded by Joseph Ratzinger. He is known as Pope Benedict the Sixteenth. ■

WORLD'S OLDEST SPECIES

Scientists say they have made a new discovery that explains why birds and alligators are among the Earth's oldest species.

Experts say around 251 million years ago there was a mass extinction on the Earth. They are not sure what caused the extinction, but they know many species died out. Before this mass extinction, scientists say, mammals were common and [dominated](#) all the other species. Yet after the mass extinction, over millions of years, archosaurs became the dominant species.

Archosaurs are thought to be the ancient [ancestors](#) of dinosaurs, and of modern-day alligators, crocodiles and birds. The scientists say they made their discovery by studying the way in which the lungs of alligators work. They were surprised to find that alligators' lungs operate in

NEWSCAST

VALENTINE'S STRAWBERRIES — An engineer and a farmer in Australia have grown a special gift for Valentine's Day – a day on which people traditionally celebrate love. The engineer found a way to make strawberries grow into an unusual shape. He got the idea after seeing cube-shaped watermelons on sale in Japan. He thought he could do something similar with strawberries. He put the tip of a strawberry plant inside a small plastic box. The fruit grew to fill the box. The engineer then did the same with heart-shaped boxes. These produced heart-shaped strawberries. The strawberries will now be sold for as much as A\$2.50 (£1.40) each.



almost exactly the same way as the lungs of birds.

Lungs enable oxygen to get into the blood. The blood then takes the oxygen to the muscles and organs. The parts of our bodies all need oxygen to work. When we breathe in, oxygen from the air is taken into tubes in the lungs. These small tubes are called bronchi. At the ends of the bronchi, the oxygen passes into our blood. The blood then carries the oxygen around the body. The lungs also get rid of carbon dioxide. This happens when we breathe out through the same tubes.



Archosaurs' modern-day descendants

The lungs of birds work slightly differently from those of humans and other mammals. Instead of breathing in and out through the same set of bronchi, birds' lungs have a series of bronchi. Air flows through the bronchi in only one direction. Scientists know this helps birds' bodies to work in air that is low in oxygen. Birds' muscles can be active in air in which the muscles of mammals could not. The one-way air system in a bird's lungs can get more oxygen out of a typical breath of air than a mammal's can.

The new study shows the lungs of alligators work in the same way as those of birds. Scientists at a university in the USA used lungs taken from dead alligators to test this idea. The scientists pumped liquid containing small brightly-coloured beads through the lungs. The beads could be seen to travel in only one direction.

After the mass extinction 251 million years ago, the Earth's atmosphere is believed to have changed. The amount of oxygen in the atmosphere became much lower. So a creature that was able to easily survive in a low-oxygen atmosphere had a big advantage.

The mammals that lived on Earth after the extinction were very small. Scientists think one of the reasons the bigger mammals could not survive was because there was not enough oxygen in the atmosphere. The only large creatures unaffected by the extinction were archosaurs. The scientists now believe the archosaurs success was because of the way in which their lungs could get more oxygen from a breath of air than those of other creatures could. ■

NEW TREATMENT FOR LEUKAEMIA

Doctors say they have successfully used a new way to treat patients who have leukaemia. They say in the future this new method could replace bone marrow transplants, which is one way currently used to treat the disease.

Leukaemia is a cancer of the blood. The illness makes white blood cells multiply very quickly. These cells crowd out the other important cells in the blood, which stops oxygen from travelling around the body properly. When a person has leukaemia, his or her body cannot fight infections easily.

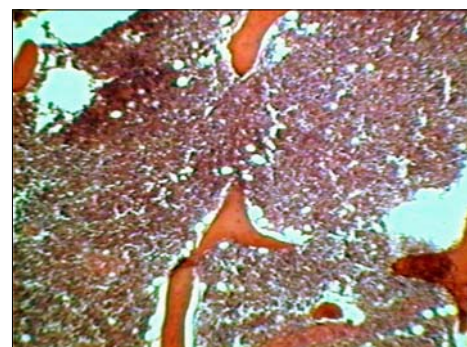
New blood cells develop in bone marrow. The bone marrow that produces new blood cells is found within a channel, or chamber, inside our larger bones. So leukaemia starts in a person's bone marrow, rapidly making too many of one type of blood cells. Having a bone marrow

transplant from a healthy donor can help a person who has leukaemia.

All the cells in our bodies do a specific job. For example, a blood cell has different characteristics from a nerve cell. Yet they all come from one type of cell – a 'master', or stem cell. Stem cells can develop into any kind of cell. This makes them useful for doctors trying to treat different diseases – including leukaemia. Stem cells can be used to produce healthy blood cells. One place in which stem cells can be found is in bone marrow.

Stem cells are also present in the umbilical cord that attaches a baby to its mother when the baby is inside her. The umbilical cord is cut after the baby is born.

One disadvantage of a transplant is that donated bone marrow has to be a close 'match' to the bone marrow of the person who needs it. If it does not match, the person's body might reject it. A matching bone marrow donor cannot always be found. Also, a donor has to have an operation to extract the bone marrow.



Enlarged photograph of bone marrow showing infiltration of leukaemia cells

The advantage of umbilical cord cells is that people's bodies do not seem to 'reject' them in the same way as they might reject a donor's cells. So cord cells can be used in a wide range of different people. The disadvantage is that an umbilical

cord does not contain enough cells needed for a transplant. Yet doctors say they have now found a solution to this problem.

The doctors discovered a way of treating the cord stem cells to produce more stem cells. They say this provides enough for a transplant into an adult patient. After many years of testing in a laboratory, the doctors transplanted the cells into some people who had leukaemia. Some ordinary cord blood cells as well as some of the laboratory-grown cells were transplanted. The doctors say the results of the test showed the leukaemia patients' bodies accepted the laboratory-grown cells more quickly. These cells also began producing more healthy blood cells than the ordinary ones.

Now, the doctors say, it is important to set up more cord blood banks. People could then donate umbilical cord blood to these banks. The doctors say this would be an important resource for treating different diseases, including leukaemia. ■

SKELETON OF ROYAL PRINCESS DISCOVERED

The 1,000-year-old bones of an English princess have been discovered in Germany. Archaeologists think the almost-complete skeleton they have found is that of Princess Eadgyth, the granddaughter of King Alfred the Great.

The skeleton was discovered in a tomb in Magdeburg cathedral, in Germany. Archaeologists had not expected to find anything at all in the tomb. They thought it was really just a memorial, or marker. Yet when they opened the tomb they found a lead coffin inside. The coffin contained a skeleton wrapped in

silk. Experts estimated the bones were those of a woman who died when she was between 30 and 40 years of age. The coffin was marked with Princess Eadgyth's name.

Princess Eadgyth – pronounced 'Edith' – was the sister of a king called Athelstan. He ruled England from 925 to 939 AD. Athelstan and Eadgyth were the grandchildren of Alfred the Great. Alfred, who ruled a part of England known as Wessex, is a famous figure in English history. He successfully defended his kingdom from frequent attacks by Vikings. He also introduced many of the country's laws.



Old church carvings of King Otto the First of Germany and his wife Eadgyth

Athelstan managed to extend Alfred's kingdom and became the first ruler of all of England. He wanted to protect his country from invasion and to try to make strong **alliances** with other powerful rulers. One way he chose to do this was to send his two sisters to be married to important rulers in other countries. Eadgyth became the wife of King Otto the First of Germany in 929 AD. They were married for 17 years and had two children.

The bones have been sent to a university in the UK. There, scientists will carry out tests on the teeth,

bones, and some soil and dead insects found in the lead coffin. From tests on the teeth and bones it may be possible to work out where the woman spent her childhood. These tests can show what type of water the person drank when she was growing up. If this matches the water found in the area of the UK that was once Wessex, it will show the bones are likely to be those of Princess Eadgyth.

Princess Eadgyth is known to have died when she was 36 years old. She was buried in a German **monastery**. Writing on the tomb says Eadgyth's remains were moved to the cathedral hundreds of years later. Historians say it was not unusual for important people's bones to be moved around in this way in the Middle Ages. It is now not known what happened to the bones of both King Alfred and King Athelstan. If the bones are proved to be those of Princess Eadgyth, they will be the oldest complete remains of a member of the British royal family ever found. ■

NEWSCAST

YOGA REWARD — Some prisons in India have offered prisoners a new way to make their time in jail shorter. They can go to yoga classes. Prison officials believe yoga is a good thing for prisoners to learn. Yoga, they say, is helpful because it exercises the body and also teaches people to manage stress and anger. Prisoners who agree to take any educational courses can apply to be released early. Yoga has now been included in these courses. So prisoners who successfully complete the yoga course can reduce their time in jail by about one month.

DOOMSDAY CLOCK

On 14th January, the hands of a clock that has showed five minutes to midnight since 2007 were moved backwards. The Doomsday Clock, as it is known, now reads six minutes to midnight.

The Doomsday Clock is not really intended to tell the time. Instead it is a symbol. The clock was designed in 1947 by a group of atomic, or nuclear, scientists in the USA. Midnight on the clock represents 'Doomsday' – the threat of a global nuclear war. The closeness of the clock's hands to midnight represents the threat of a nuclear war breaking out. When the clock was first set, the hands read seven minutes to midnight.

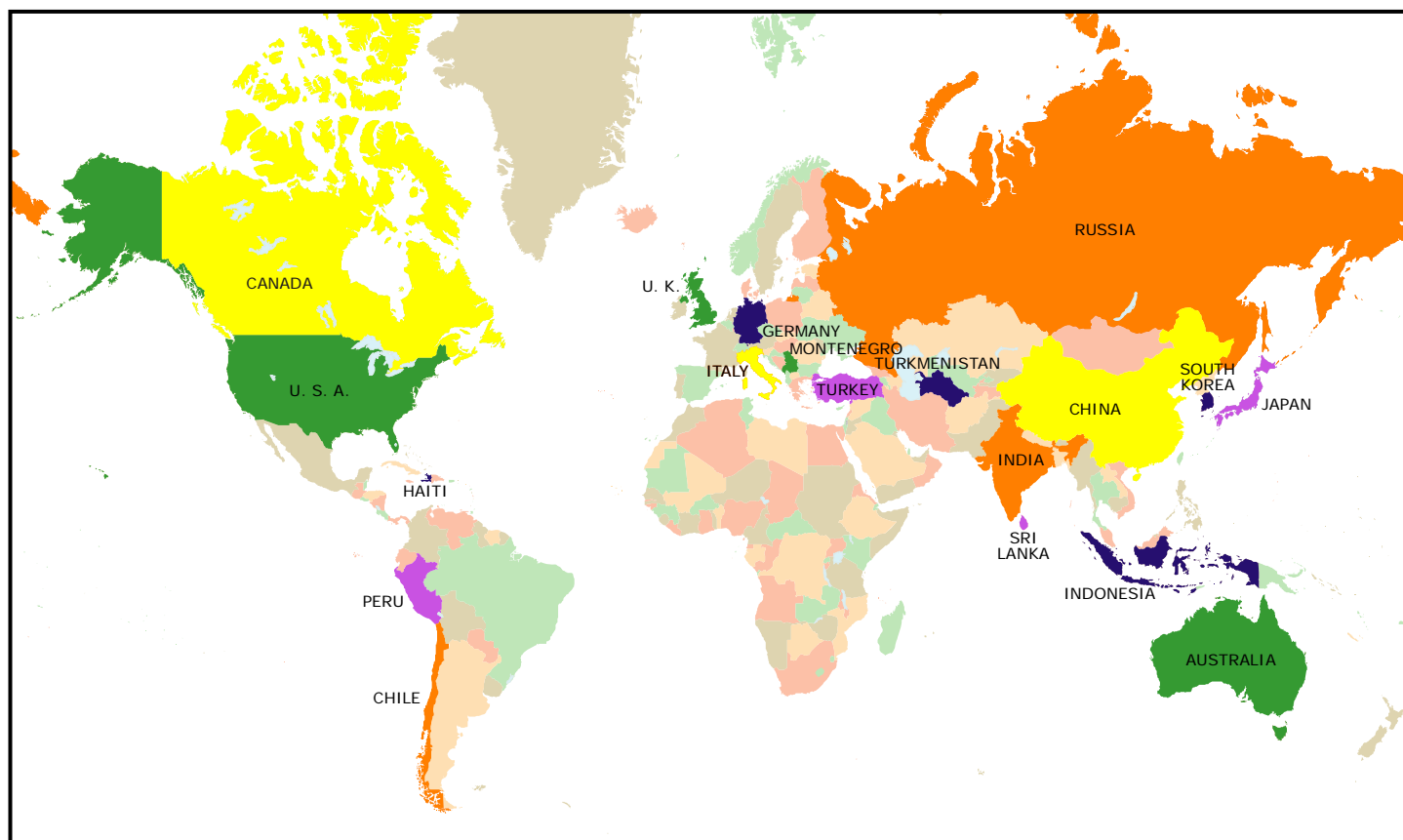
In 1945, two years before the Doomsday Clock was designed, the USA had dropped two atomic bombs

on the cities of Hiroshima and Nagasaki, in Japan. These bombs brought an end to the Second World War (1939 – 1945) as Japan surrendered soon after they were used. This was the first and, so far, the only time nuclear weapons have been used in a war.

Since 1947 the hands of the clock have been set at different times depending on the threat of nuclear war. For example, in 1969 the clock read ten minutes to midnight. The people who decide where the hands should be belong to a group, or board, that publishes a print and an online magazine. Called the Bulletin of the Atomic Scientists (BAS), it contains articles about human-made science

developments that could be a threat to people or the Earth. Scientists who worked on developing the atomic bombs dropped on Japan first set up the BAS in 1945. They were worried about the effects of the new weapons and wanted to warn people about their use.

The board of the BAS frequently meets with other scientists to talk about the threat of different man-made technologies, including nuclear weapons. It then decides whether to move the clock's hands forwards or backwards, or leave them where they are. Moving the hands forwards means the threat is increasing, and moving them backwards means it's decreasing.



This map shows countries to which news stories refer in this issue. Visit www.newsademic.com for more detailed world maps.

The Doomsday Clock is in New York City, in the USA. On 14th January, at ten o'clock in the morning, the hands of the clock were moved back by one minute. The event was shown live on the internet. The last time the clock hands were moved was in 2007. Then it was moved forwards to five minutes to midnight, after the BAS decided to include global warming and climate change as possible threats to the human race.

The scientists say they decided to move the hands back because some world leaders now seem willing to reduce the number of nuclear weapons they have. Both President Barack Obama of the USA and President Dmitry Medvedev of Russia have said they wish to reduce the numbers of their nuclear weapons.

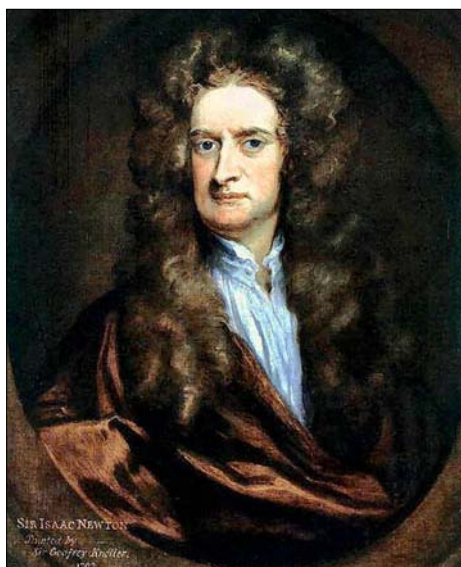
Since 1947 the clock has been adjusted 19 times. The closest its hands have come to midnight was in 1953. Then they were set at two minutes to midnight. At that time the USA and the Russian-led Soviet Union were enemies and both were testing new types of nuclear weapons. ■

FAMOUS APPLE STORY GOES ONLINE

A science organisation in the UK has begun a project to put digital copies of important scientific [manuscripts](#) online. The 'Turning the Pages' project means people around the world can see original writings that are too delicate to touch.

On 18th January, a digital copy of a document handwritten in 1752 was posted on the Turning the Pages website. The document tells the famous story of how an apple falling from a tree led a scientist to begin to understand the idea of gravity.

Sir Isaac Newton (1642 – 1727) was a scientist and mathematician. He worked to find explanations for how physical objects are affected by things such as forces, motion, and light. He gave lectures and wrote books explaining his ideas.



Sir Isaac Newton

One of the things he wanted to find out was how the Moon seemed to stay in orbit at a certain distance from the Earth. He realised there had to be a force that held the planets and stars in place and that it must have an effect on each object.

We now know this force as gravity – the force that causes two things to 'pull towards' one another. For example, when you jump up in the air, gravity pulls you back down to the ground again. Without gravity we would 'fly off' into space! Sir Isaac Newton realised the force that keeps us on the ground must be the same as the force that holds all the planets and stars in orbit.

The digitised manuscript placed on the internet is a biography of Sir Isaac Newton written by William Stukely. In it Mr Stukely describes having a conversation with the scientist while sitting in an apple

orchard. Sir Isaac Newton explained to Mr Stukely that he had been in the same position when he first started thinking about gravity. He said he saw an apple fall to the ground and began to wonder why things always fall straight downwards. Later he worked out that a force must be 'pulling' the apple downwards, and that this same force held the planets in place.

The Royal Society is digitising the manuscripts. The Society is based in London. It is one of the world's oldest science organisations. In 2010 it is celebrating its 350th anniversary. Its members – known as Fellows – are some of the world's top scientists. Sir Isaac Newton was president of the Royal Society from 1703 until his death. ■

FLOODING IN PERU

Heavy rains in part of Peru have damaged an important archaeological site, destroyed many homes, and stranded tourists visiting the ruins of a famous Inca city.



Part of the Sacsayhuamán fortress

Parts of the Andes Mountain Range are in Peru. Here there are many Inca ruins. The Inca civilisation, which historians estimate began around the year 1200, ranged across large parts of the Andes. This included parts of Peru as well as what are now Chile, Ecuador, and Bolivia. Spanish invaders

finally destroyed the Inca civilisation in 1533.

By the early 1500s Europeans had arrived in North and South America, after crossing the Atlantic Ocean. Spanish soldiers – called Conquistadors – heard rumours of cities built of gold. They first arrived in what is now Peru in the 1520s. They had much better war weapons than the Incas and easily defeated them. The Conquistadors took most of the gold they found back to Spain. The European invaders also brought with them illnesses and diseases previously unknown in the Americas. So many Inca people died of diseases such as smallpox to which they had not been exposed before.



Machu Picchu

Ancient Inca ruins are now popular places for tourists to visit. One of the most famous is a stone fortress called Sacsayhuamán. This fortress is close to the city of Cuzco, which was the capital of the Inca Empire.

Another famous Inca ruin is Machu Picchu, known as 'The Lost City of the Incas'. It is high up in the mountains. The Spanish invaders never found it, and its ruins were not widely known about until 1911.

Days of heavy rain in Peru caused many landslides. One blocked the railway line between Cuzco and a village close to Machu Picchu. Visitors going to Machu Picchu begin

their walk to the Inca ruins from this village. Nearly 2,000 tourists were stranded near Machu Picchu for several days. Helicopters were first used to bring extra food and water for the visitors. On 25th January the helicopters began picking the tourists up and flying them back to Cuzco.

Many mountain rivers flooded. The floodwaters destroyed 3,000 homes and wrecked large areas of farm crops around Cuzco. Part of the Sacsayhuamán fortress and ancient Inca buildings in the centre of Cuzco were also damaged.

Officials say the rains have been the worst Peru has had for 15 years. ■

END TO PERSONALITY CULT?

On 18th January Kurbanguly Berdymukhamedov, the president of Turkmenistan, ordered that a national monument be taken down. The large arch topped with a golden statue is in Ashgabat, the country's capital. Many people think the president's order shows he has decided to end the personality cult of Saparmyrat Niyazov, a former leader of Turkmenistan.

A personality cult is a type of 'hero worship' of a country's leader. It normally only happens when a leader rules the country as a dictator and no opposition is allowed. The leader, together with his or her supporters, uses newspapers, films, and radio and television broadcasts to create a 'god-like' image. The people are told their leader never makes errors and must not be questioned.

Examples of leaders who have created personality cults include Adolf Hitler of Nazi Germany,

Joseph Stalin of communist Russia and Mao Zedong, the leader of China from 1949 until his death in 1976. In North Korea Kim Il-sung, who died in 1994, still has a 'god-like' image. His personality cult has been passed on to his son, Kim Jong-il, who now runs the country.

President Niyazov ruled Turkmenistan for 21 years until he died in 2006. He called himself Turkmenbashi, which translates as 'father of the Turkmen'. Large pictures of President Niyazov were placed all over the country. There are hundreds of statues of him. School children read his books in their lessons. President Niyazov renamed the 12 months of the year after members of his family. He also changed the Turkmen word for 'bread' to the name of his mother.



Neutrality Arch

The monument that President Berdymukhamedov has ordered to be taken down is called the Neutrality Arch. It is 75 metres (246 feet) high and stands on three legs. On top is a large golden statue of Turkmenbashi. The top of the arch was designed so the golden statue

rotates 360 degrees every day. This means the statue always faces the Sun as it appears to travel across the sky. The Neutrality Arch was built in 1998.

President Berdymukhamedov says he wants to modernise Turkmenistan. Most people think this is one reason he wants to get rid of the Turkmenbashi personality cult. The president has already changed the names of the months back to what they were before. He has not put up statues of himself, but several large pictures of him are hung on public buildings. Some people complain that President Berdymukhamedov is becoming a dictator. They suspect he too is now planning to develop a personality cult of his own. ■

TIGER ADOPTION PLAN

The government of Indonesia says it may introduce a new plan to conserve a rare species of big cat. The new plan will offer Sumatran tigers for adoption.

The Sumatran tiger is one of the world's most endangered species. The tigers live in small **isolated** areas of forest on the island of Sumatra, in Indonesia. They can live to around 15 years of age. Adult Sumatran tigers can grow up to about 2.7 metres (nine feet) in length. Experts believe there are now only between 400 and 500 Sumatran tigers left in the wild.

Wildlife organisations often offer an 'adoption' program for rare species to raise money to conserve them. People who pay money to 'adopt' don't really keep the animal itself. Instead they usually receive photographs and updates about the work the wildlife organisation is

doing and how the adoption money is being spent.

Yet the new scheme in Indonesia would allow people to pay a fee to keep the rare tigers themselves. People would be able to 'rent' the tigers and keep them in enclosures. All the tigers in the adoption scheme would be those already in captivity.



Sumatran tiger

The scheme says people would have to accept visits from vets every few months to check on the tigers' health. People would have to have at least 5,000 square metres (54,000 square feet) of land. The quality of the tigers' food would also have to meet certain standards. The cost of adopting a pair of tigers would be US\$100,000 (£62,000).

Some people oppose the idea of the adoption scheme. They say tigers should not be kept as pets. Conservationists claim the government should work on ways to save the tigers' natural habitat to preserve the species. The main reason, conservationists say, the tigers are endangered is that large areas of the forests in which they live have been destroyed by people illegally cutting down trees.

The Indonesian government says the scheme will help keep the tigers safe. It says it hopes the Sumatran tiger pairs will breed in the safety of people's enclosures so the tiger population will increase. ■

SLIME SHOWS THE WAY

Scientists in Japan have reported some new research that might change the way in which transport and communication systems are designed. To do their research the scientists studied the behaviour of a living organism – slime mould.

Organisms, or living things, are made of tiny 'building blocks' called cells. An organism such as a human contains many millions of cells. Slime mould is an organism that has a single cell. It doesn't have a brain that makes decisions and controls its behaviour in the way humans do. Instead, the way in which slime mould acts is based on quite simple reactions. For example, when a source of food is nearby, slime mould will spread towards the source so it can feed.

The scientists noticed that when more than one food source was offered, the mould made connections between the sources. These connections covered the shortest

NEWSCAST

THE GREAT CHOCOLATE WALL — On 29th January the World Chocolate Wonderland Show will open in Beijing, the capital of China. One of the show's star attractions is a copy of the Great Wall of China. It has been built out of hundreds of tiny solid bricks of chocolate. The chocolate wall is ten metres (33 feet) long. The show is meant to encourage people in China to eat more chocolate. Another exhibit is a chocolate waterfall. The show's organisers say people will also be able to learn how to make chocolate. Over 80 tonnes of chocolate have been used to build all the exhibits.

and most **efficient** distance between two sources. The scientists noticed the connections looked a bit like a railway system joining up different cities.

The scientists then made a small map of Tokyo, the capital of Japan, and the cities nearby. They put tiny amounts of food on each city on the map. The scientists then put slime mould onto the map to see what would happen. The connections the slime mould made between the food sources looked just like the real railway system connecting all the cities. Therefore, the scientists think the railway system does join up the cities in the most efficient way.



Slime mould growing on a patch of grass

What interested the scientists was that the slime mould, without a brain, had found its own way to make these connections naturally. Now the scientists believe slime mould could be used in the design of other networks, such as those connecting up computers or communication systems. If a map were made of the locations that needed to be connected, and food sources put on each point, the slime mould could show the most efficient way to connect them.

The scientists even discovered a way to stop the mould crossing certain parts of the map. The slime mould avoids light. So engineers could even design a railway system that avoided a range of mountains,

by shining light on the area of the map where the mountains were. The mould would then find the most efficient way around it. ■

SNOWFLAKE BENTLEY'S PHOTOS

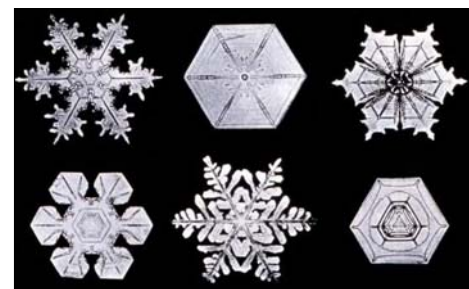
Children who live in countries where it snows in winter are often told that 'no two snowflakes are identical'. The crystals that form a snowflake seem to make a **unique** pattern for each one. One of the reasons we know this is because of a series of old snowflake photographs. On 20th January some of these photographs went on sale. The photographs are special because they are the first examples of pictures that show close up how snowflakes are formed.

The photographs were taken by Wilson A. Bentley around 90 years ago. Mr Bentley was a farmer who lived in the USA. He was later known by his nickname – 'Snowflake Bentley'. Mr Bentley said he became interested in studying the patterns in snowflakes – which he called snow crystals – when his parents bought him a microscope for his 15th birthday.

Mr Bentley tried to work out how to photograph snowflakes. Eventually, he was able to do it after being given some photographic equipment when he was 17. He managed to use the equipment to take photographs of snowflakes through his microscope. His method became known as photomicrography. He took the first successful snowflake photomicrographs when he was 19 years old.

Mr Bentley said local people were not very interested in his pictures. However, he wrote articles and provided photographs for universities and magazines. One

of these was *National Geographic*, a very popular magazine about the natural world. Scientists say Mr Bentley's snow crystal pictures were so clear they were used by people studying snowflakes for many years afterwards – even after better photographic equipment was invented.



Snowflake Bentley photographs

Mr Bentley published a book of his photographs in 1931. Called *Snow Crystals*, it contained over 2,400 photographs of different snowflakes. During his lifetime he took more than 5,000 photomicrographs showing individual snowflakes. Mr Bentley said as far as he knew no two snowflake pictures were exactly the same.

The ten snow crystal photographs are being sold for US\$4,800 (£3,000) each. Snowflake Bentley died in 1931.

Newsademic.com

Editor: Amber Thody

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B O O K R E V I E W

HAVE YOU READ ...?



Ranger Will Treaty. Will is no longer an apprentice; he is a fully-fledged King's Ranger on assignment in Norgate Fief. Castle Macindaw has been taken over by a renegade Knight, Sir Keren, and his vicious group of thugs. The loss of the castle is a huge strategic problem for the entire Kingdom of Araluen. To make things worse the savage Scotti tribes to the north are mustering forces... and sending raiding parties and patrols across the border! Could these two things be a coincidence? What is the connection? And how much of it is a threat to the region and the whole Kingdom?

Will teams up with his warrior best friend Horace, and together they must find a way to reclaim the castle. They have very few resources and no troops to count upon in their mission to preserve the Kingdom. And Will has an extra complication. Childhood friend Alyss, a Royal Courier and Diplomat, is held hostage in Castle Macindaw. Will and Alyss have some unfinished personal affairs: Will is uncertain whether he should tell Alyss his feelings for her, and Alyss is uncertain where their friendship is heading.

The action is realistic because of the true-to-life details of its medieval setting. Communication over great distances with the King and the government is a real problem! The characters have ingenious ways of long-distance "tele"-communication – but can't be certain whether their messages will be eaten on the way or arrive safely. The only way to know if a message arrives

Who doesn't like a story with castles, knights, heroes, villains, spies...and awesome fight scenes? This book gives us a fantastic example of life during medieval times. The characters interact in very realistic and believable ways. They also remain unpredictable, and a lot of uncertainty keeps the story fresh and interesting until the very end.

This book is the sixth in the Ranger's Apprentice series and focuses on

is to wait for a reply... an uncertain system that could take months!

I really like seeing the heroes forced to make decisions and compromises to solve complex problems. 'Thinking outside the box' gets new meaning when Will needs to find fresh troops to aid in the siege. I also especially like how the characters deal with the Viking-like pirates stranded after a storm. The characters are made to find clever and creative solutions that benefit everyone. The methods are not always what one would expect from a 'hero' – and the 'villains' are not always so bad when things are seen from their perspective!

But for me, the very best thing about this series is that it revolves around magic and the role of magic in medieval times. It really tackles the question of whether magic is real, or just a powerful superstition that, dealt with carefully, can be used as a means to an end.

You don't need to have read the previous books to follow the story, but I recommend reading them in order. Each is a great story; added up, the books make the characters' backgrounds and development clearer, and give the story its complexity.

The story's plot is both easy to follow and remains interesting. There are no loose ends as the book finishes, but it still leads me to look forward to reading Book 7, *Erak's Ransom*.

Australian author John Flanagan wrote the Ranger's Apprentice stories to give his own children something interesting and exciting to read. They liked them so much he turned the stories into this series of novels.

Ranger's Apprentice Book 6 The Siege of Macindaw by John Flanagan. Philomel Books.

Reviewed by **Chris Tarn**

WANT US TO REVIEW A BOOK THAT YOU HAVE READ AND ENJOYED?

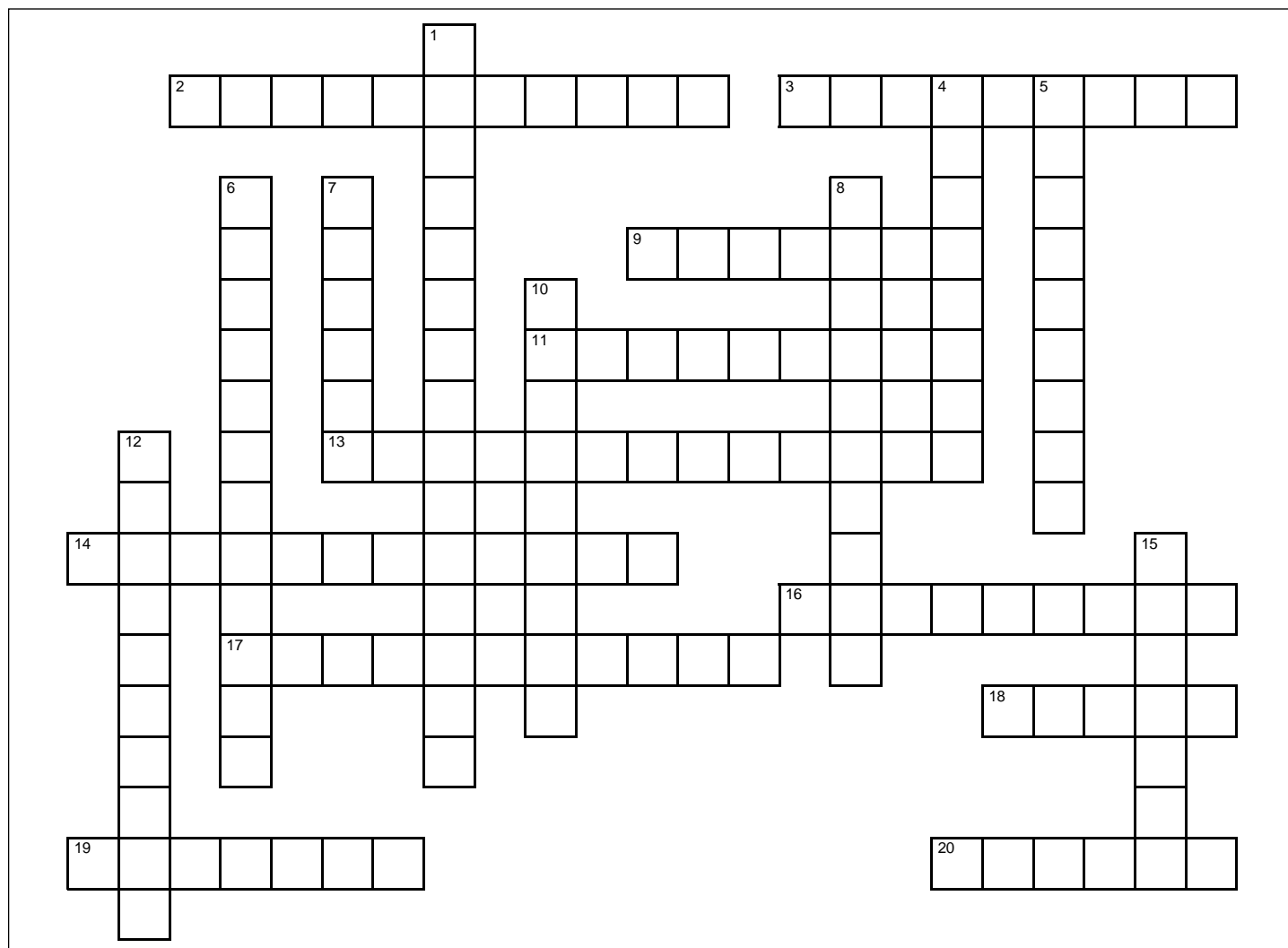
If you do, look for the 'recommended book' link in your subscriber menu when you log in to our website.

Complete the form and tell us why you enjoyed the book. If we review your choice, we'll mention your name and include some of your comments.

GLOSSARY

PRIZE COMPETITION

INSTRUCTIONS: ① Complete the crossword. The answers are highlighted in orange in the news stories. There are 25 words highlighted and you need 20 of them to complete the crossword. ② Once you have solved the crossword find the 20 words in the word search on the next page ➡



Across

- 2 Verb** To kill an important person deliberately, especially for political reasons
3 Verb Controlled by being more powerful or stronger
9 Adjective Lasting forever or a very long time
11 Adjective Using resources in the most effective way to accomplish something
13 Verb Treated people differently or unfairly
14 Verb To have brought animals or plants under human control for transport, food, power or companionship
16 Noun (Plural) People, animals or living organisms from which others are descended
17 Noun (Plural) Old documents or books, usually written by hand
18 Noun A short sentence or phrase that expresses a belief or ideal
19 Noun A religious leader or saviour
20 Noun Food, money or other things given to help people in need

Down

- 1 Noun (Plural)** Scientists who use physical laws and ideas to explain the behaviour of the stars and other objects in space
4 Adjective Separate or far away from other places or people
5 Noun (Plural) Groups of two or more countries or organisations that support each other
6 Adjective Describes anything related to hot water
7 Verb Got into someone else's computer system without permission
8 Noun A sum of money used for future income or profits
10 Noun An area of land that an animal defines as its own and tries to control
12 Noun (Plural) The qualities of a substance or material, or the ways in which something can be used
15 Adjective Describes something that is easily broken

GLOSSARY

PRIZE COMPETITION *CONTINUED*

A S T R O P H Y S I C I S T S C D L
 A S O D O M I N A T E D L S L E T A
 C I S T E U M C A R B A O E K N N M
 A T E A T T D T Z Q N Q F C I R E R
 G C O S S O A R X R W R A N T E I E
 Y H E R N S M L E T X H Y A L L C H
 Q W L O Z O I T O E N D R I P I I T
 T C T T U S E N J S E H H L R E F O
 N S T S W A T M A T I U A L O F F R
 E F I E B U J P A T V W I A P N E D
 M Z R C O T T C I W E K S O E H G Y
 T S B N O N I V C R R N S O R N H H
 S A A A B T Z U P Q C S E D T S K F
 E E R R S D U Z N A S S M C I O W V
 V K J E J Y M R W Y U T U N E O G G
 N M M T E R R I T O R Y Z N S O H O
 I O K R Y Y W O O U E V S H A O O N
 D E T A N I M I R C S I D H W M M H

INSTRUCTIONS: ③ Find the crossword answers in the word search. Words can go vertically, horizontally, diagonally and back to front. ④ After solving the word search write down the unused letters, starting at the top left and reading from left to right, top to bottom to find the solution. **Hint** - The numbers of letters and words in the solution are shown under the word search.

COMPETITION PRIZES

Glossary Prize Winner

Hardback copy of 'Ranger's Apprentice Book 6 The Siege of Macindraw' by John Flanagan

Glossary Prize Runner up

10 free issues of Newsademic

Sudoku Prize Winner

10 free issues of Newsademic

ISSUE NUMBER 110 PRIZE WINNERS

Glossary Competition

Adrian Bruce, UK
Mandy Payne, Canada

Sudoku Competition

Junko Hayakawa, USA

Competition solution (two words with a total of 16 letters)

Go to www.newsademic.com log in and submit your solution by clicking on the "Enter competition" link within the Subscribers tools menu.

Deadline for receiving your entry is 10 pm on 11th February 2010 (GMT/UTC).

COMPETITION RULES:

1 Competition prizes are awarded on a per issue and not a per edition basis. 2 Only one entry per person per competition will be accepted. 3 You must obtain permission from your parent/guardian before entering if you are under 16 years of age. 4 Deadline for receiving entries is at 10 pm (GMT) on 11th February 2009. 5 The winners will be randomly selected from all correct entries received. 6 The winners will be contacted by E-mail. Newsademic's decision is final and no correspondence will be entered into. 7 Prizes must be taken as offered. There are no cash alternatives. 8 Newsademic does not accept any responsibility for lost or late entries due to the internet. Proof of submission is not proof of receipt. 9 Prizes won by those who have used a school subscription to enter will be awarded to the individual entrant and not to the school. 10 Competitions are not open to employees or contractors of Newsademic. 11 Newsademic reserves the right to cancel competitions at any stage, if in their opinion it is deemed necessary or if circumstances arise beyond their control. 12 These rules are governed by the laws of England and Wales. 13 When entering competitions entrants will be deemed to have accepted these rules and to agree to be bound by them.

SUDOKU COMPETITION

INSTRUCTIONS: ① Fill the boxes on each horizontal row with a number between 1 and 9. ② Fill the boxes on each vertical row with a number between 1 and 9. ③ Make sure that each number between 1 and 9 also appears in each highlighted 3 x 3 square box. ④ After solving the Sudoku puzzle write down the numbers from the tinted vertical column from top to bottom in the boxes below.

Competition Solution

2					6	8		1
					7			
		6	8	1	9	5		
5	1			7				3
		4		8			7	
					1	6		
			5					1
	3							
	5			9	4	3		